

AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph beginning at page 6, line 15, with the following rewritten paragraph:

-- R^x represents halogen atom, nitro group, amino group, cyano group, hydroxy group, carboxy group, -CONH₂, -SO₃H, -NR³R⁴ (R³ and R⁴ may be the same as or different from each other, and each represents alkyl group having 1 to 5 carbon atoms), alkyl group having 1 to 10 carbon atoms, alkenyl group having 2 to 10 carbon atoms or alkynyl group having 2 to 10 carbon atoms; wherein the alkyl group, the alkenyl group and the alkynyl group may be substituted with one or more groups of phenyl, naphthyl, pyridyl, quinolyl, thienyl, furyl, piperidilpiperidyl, pyrrolidyl, morpholyl, cycloalkyl having 3 to 7 carbon atoms, cyano, nitro, hydroxy, oxo, thioxo, carboxy, -CONH₂ and -SO₃H; one or more methylenes which constitute the alkyl group, the alkenyl group and the alkynyl group may be replaced with any of phenylene, thienylene, furylene, cyclohexylene, cyclopentylene, -O-, -S-, -CO₂-, -NHCO-, -NR^{8a}-, and -N⁺W^aR^{9a}R^{10a}- (R^{8a} represents alkyl group having 1 to 5 carbon atoms or alkenyl group having 2 to 5 carbon atoms; the alkyl group and the alkenyl group in R^{8a} may be substituted with one or more groups of phenyl, cycloalkyl having 3 to 7 carbon atoms and hydroxy. R^{9a} and R^{10a} may be the same as or different from each other, and each represents alkyl group having 1 to 5 carbon atoms or alkenyl group having 2 to 5 carbon atoms, and may be substituted with one or more groups of phenyl, cycloalkyl having 3 to 7 carbon atoms and hydroxy. W^a- represents counteranion.);--

Please replace the paragraph beginning at page 8, line 4, with the following rewritten paragraph:

-- I) R^{5a} , R^{6a} and R^{7a} may be the same as or different from one another, and each represents alkyl group having 1 to 10 carbon atoms, alkenyl group having 2 to 10 carbon atoms or alkynyl group having 2 to 10 carbon atoms; wherein the alkyl group, the alkenyl group and the alkynyl group may be substituted with one or more groups of phenyl, naphthyl, pyridyl, quinolyl, thiienyl, furyl, piperidilpiperidyl, pyrrolidyl, morpholyl, cycloalkyl having 3 to 7 carbon atoms, cyano, nitro, hydroxy, oxo, thioxo, carboxy, -CONH₂ and -SO₃H; and wherein one or more methylenes which constitute the alkyl group, the alkenyl group and the alkynyl group may be replaced with any of phenylene, thiienylene, furylene, cyclohexylene, cyclopentylene, -O-, -S-, -CO₂-, -NHCO-, -NR⁸-, and -N⁺WR⁹R¹⁰- (R^8 represents alkyl group having 1 to 5 carbon atoms or alkenyl group having 2 to 5 carbon atoms. The alkyl group and the alkenyl group in R^8 may be substituted with one or more groups of phenyl, cycloalkyl having 3 to 7 carbon atoms and hydroxy. R^9 and R^{10} may be the same as or different from each other, and each represents alkyl group having 1 to 5 carbon atoms or alkenyl group having 2 to 5 carbon atoms, and may be substituted with one or more groups of phenyl, cycloalkyl having 3 to 7 carbon atoms and hydroxy. W⁻ represents counteranion.);--

Please replace the paragraph beginning at page 8, line 28, with the following rewritten paragraph:

-- II) $N^+R^{5a}R^{6a}R^{7a}$ represents a monocyclo or bicyclo ring formed of 4 to 9 carbon atoms in addition to the ammonium nitrogen atom, with a proviso that a position of binding to Z^a is the ammonium nitrogen atom; wherein, in the monocyclo and bicyclo rings, one of the carbon atoms which constitutes the ring may be replaced with any of oxygen, nitrogen or sulfur atom; and the monocyclo and bicyclo rings may be substituted with one or more groups of

hydroxy, oxo, thioxo, cyano, phenyl, naphthyl, thienyl, pyridyl, cycloalkyl having 3 to 7 carbon atoms, carboxy, -CONH₂, -SO₃H and -R¹¹ (R¹¹ represents alkyl group having 1 to 8 carbon atoms or alkenyl group having 2 to 8 carbon atoms. The alkyl group and the alkenyl group in R¹¹ may be substituted with one or more groups of phenyl, naphthyl, pyridyl, quinolyl, thienyl, furyl, piperidilpiperidyl, pyrrolidyl, morpholyl, cycloalkyl having 3 to 7 carbon atoms, cyano, nitro, hydroxy, oxo, thioxo, carboxy, -CONH₂ and -SO₃H; and one or more methylenes which constitute the alkyl group and the alkenyl group may be replaced with any of phenylene, thienylene, furylene, cyclohexylene, cyclopentylene, -O-, -S-, -CO₂-, -NHCO-, -NR⁸-, and -N⁺W⁻R⁹R¹⁰-; R⁸, R⁹, R¹⁰ and W⁻ are the same as the above); and the group which is not involved in the formation of the monocyclo ring and the bicyclo ring in R^{5a}, R^{6a} and R^{7a} is the same as the above I); and --

Please replace the paragraph beginning at page 13, line 18, with the following rewritten paragraph:

--I) R⁵, R⁶ and R⁷ may be the same as or different from one another, and each represents alkyl group having 1 to 10 carbon atoms, alkenyl group having 2 to 10 carbon atoms or alkynyl group having 2 to 10 carbon atoms; wherein the alkyl group, the alkenyl group and the alkynyl group may be substituted with one or more groups of phenyl, naphthyl, pyridyl, quinolyl, thienyl, furyl, piperidilpiperidyl, pyrrolidyl, morpholyl, cycloalkyl having 3 to 7 carbon atoms, cyano, nitro, hydroxy, oxo, thioxo, carboxy, -CONH₂ and -SO₃H; and wherein one or more methylenes which constitute the alkyl group, the alkenyl group and the alkynyl group may be replaced with any of phenylene, thienylene, furylene, cyclohexylene, cyclopentylene, -O-, -S-, -CO₂-, -NHCO-, -NR⁸-, and -N⁺W⁻R⁹R¹⁰-; and R⁸, R⁹, R¹⁰ and W⁻ are the same as the above;--

Please replace the paragraph beginning at page 18, line 17, with the following rewritten paragraph:

--R^x represents halogen atom, nitro group, amino group, cyano group, hydroxy group, carboxy group, -CONH₂, -SO₃H, -NR³R⁴, alkyl group having 1 to 10 carbon atoms, alkenyl group having 2 to 10 carbon atoms or alkynyl group having 2 to 10 carbon atoms. The alkyl group, the alkenyl group and the alkynyl group may be substituted with one or more groups of phenyl, naphthyl, pyridyl, quinolyl, thienyl, furyl, piperidilpiperidyl, pyrrolidyl, morpholyl, cycloalkyl having 3 to 7 carbon atoms, cyano, nitro, hydroxy, oxo, thioxo, carboxy, -CONH₂ and -SO₃H; and one or more methylenes which constitute the alkyl group, the alkenyl group and the alkynyl group may be replaced with any of phenylene, thienylene, furylene, cyclohexylene, cyclopentylene, -O-, -S-, -CO₂-, -NHCO-, -NR^{8a}-, and -N^tWⁿ-R^{9a}R^{10a}-. R^{8a} represents alkyl group having 1 to 5 carbon atoms or alkenyl group having 2 to 5 carbon atoms. The alkyl group and the alkenyl group in R^{8a} may be substituted with one or more groups of phenyl, cycloalkyl having 3 to 7 carbon atoms and hydroxy. R^{9a} and R^{10a} may be the same as or different from each other, and each represents alkyl group having 1 to 5 carbon atoms or alkenyl group having 2 to 5 carbon atoms, and may be substituted with one or more groups of phenyl, cycloalkyl having 3 to 7 carbon atoms and hydroxy. --

Please replace the paragraph beginning at page 26, line 1, with the following rewritten paragraph:

--I) R^{5a}, R^{6a} and R^{7a} may be the same as or different from one another, and each represents alkyl group having 1 to 10 carbon atoms, alkenyl group having 2 to 10 carbon atoms or alkynyl group having 2 to 10 carbon atoms. The alkyl group, the alkenyl group and the alkynyl group may be substituted with one or more groups

of phenyl, naphthyl, pyridyl, quinolyl, thienyl, furyl, piperidylpiperidyl, pyrrolidyl, morpholyl, cycloalkyl having 3 to 7 carbon atoms, cyano, nitro, hydroxy, oxo, thioxo, carboxy, -CONH₂ and -SO₃H. Further, one or more methylenes which constitute the alkyl group, the alkenyl group and the alkynyl group may be replaced with any of phenylene, thiophene, furylene, cyclohexylene, cyclopentylene, -O-, -S-, -CO₂-, -NHCO-, -NR⁸-, and -N^WWR¹⁰-. R⁸ represents alkyl group having 1 to 5 carbon atoms or alkenyl group having 2 to 5 carbon atoms. The alkyl group and the alkenyl group may be substituted with one or more groups of phenyl, cycloalkyl having 3 to 7 carbon atoms and hydroxy. R⁹ and R¹⁰ may be the same as or different from each other, and each represents alkyl group having 1 to 5 carbon atoms or alkenyl group having 2 to 5 carbon atoms, and may be substituted with one or more groups of phenyl, cycloalkyl having 3 to 7 carbon atoms and hydroxy. W⁻ represents counteranion.--

Please replace the paragraph beginning at page 30, line 25, with the following rewritten paragraph:

--II) N^WR^{5a}R^{6a}R^{7a} represents a monocyclo or bicyclo ring formed by 4 to 9 carbon atoms in addition to the ammonium nitrogen atom, with a proviso that a position of binding to Z^a is the ammonium nitrogen atom. In the monocyclo and bicyclo rings, one of the carbon atoms which constitute the ring may be substituted with any of oxygen, nitrogen or sulfur atom, and further the monocyclo and bicyclo rings may be substituted with one or more groups of hydroxy, oxo, thioxo, cyano, phenyl, naphthyl, thienyl, pyridyl, cycloalkyl having 3 to 7 carbon atoms, carboxy, -CONH₂, -SO₃H and -R¹¹. R¹¹ represents alkyl group having 1 to 8 carbon atoms or alkenyl group having 2 to 8 carbon atoms. The alkyl group and the alkenyl group may be substituted with one or more groups of phenyl, naphthyl, pyridyl, quinolyl, thienyl, furyl,

piperidilpiperidyl, pyrrolidyl, morpholyl, cycloalkyl having 3 to 7 carbon atoms, cyano, nitro, hydroxy, oxo, thioxo, carboxy, -CONH₂ and -SO₃H, and further one or more methylenes which constitute the alkyl group and the alkenyl group may be replaced with any of phenylene, thienylene, furylene, cyclohexylene, cyclopentylene, -O-, -S-, -CO₂-, -NHCO-, -NR⁸-, and -N⁺W⁻R⁹R¹⁰-.

R⁸ represents alkyl group having 1 to 5 carbon atoms or alkenyl group having 2 to 5 carbon atoms. The alkyl group and the alkenyl group may be substituted with one or more groups of phenyl, cycloalkyl having 3 to 7 carbon atoms and hydroxy. R⁹ and R¹⁰ may be the same as or different from each other, and each represents alkyl group having 1 to 5 carbon atoms or alkenyl group having 2 to 5 carbon atoms, and may be substituted with one or more groups of phenyl, cycloalkyl having 3 to 7 carbon atoms and hydroxy. W represents counteranion. The group which is not involved in the formation of the monocyclo ring and the bicyclo ring in R^{5a}, R^{6a} and R^{7a} represents alkyl group having 1 to 10 carbon atoms, alkenyl group having 2 to 10 carbon atoms or alkynyl group having 2 to 10 carbon atoms. The alkyl group, the alkenyl group and the alkynyl group may be substituted with one or more groups of phenyl, naphthyl, pyridyl, quinolyl, thiienyl, furyl, piperidilpiperidyl, pyrrolidyl, morpholyl, cycloalkyl having 3 to 7 carbon atoms, cyano, nitro, hydroxy, oxo, thioxo, carboxy, -CONH₂ and -SO₃H, and further one or more methylenes which constitute the alkyl group, the alkenyl group and the alkynyl group may be replaced with any of phenylene, naphthylene, thiienylene, furylene, pyridylene, cyclohexylene, cyclopentylene, -O-, -S-, -CO₂-, -NHCO-, -NR⁸-, and -N⁺W⁻R⁹R¹⁰-.

R⁸ represents alkyl group having 1 to 5 carbon atoms or alkenyl group having 2 to 5 carbon atoms. The alkyl group and the alkenyl group may be substituted with one or more groups of phenyl, cycloalkyl having 3 to 7 carbon atoms and hydroxy. R⁹ and R¹⁰ may be the same as or different from each other, and each represents alkyl group having

1 to 5 carbon atoms or alkenyl group having 2 to 5 carbon atoms, and may be substituted with one or more groups of phenyl, cycloalkyl having 3 to 7 carbon atoms and hydroxy. W represents counteranion.--

Please replace the paragraph beginning at page 31, line 14, with the following rewritten paragraph:

--The monocyclo ring or the bicyclo ring represented by $N^tR^{5a}R^{6a}R^{7a}$ is preferably any of pyrrolidinium ring, piperidinium ring, morpholinium ring, thiomorpholinium ring, piperazinium ring, azepanium ring, quinuclidinium ring or 1,4-diazabicyclo[2.2.2]octanium ring. The monocyclo ring and the bicyclo ring may be substituted with one or more groups of hydroxy, oxo, cyano, phenyl, $-CONH_2$ and $-R^{11}$. As R^{11} , alkyl group having 1 to 6 carbon atoms or alkenyl group having 3 carbon atoms is preferable, and straight alkyl group having 1 to 5 carbon atoms (e.g., methyl, ethyl, n-propyl, n-butyl, n-pentyl), branched alkyl group having 6 carbon atoms (e.g., 3,3-dimethylbutyl) or straight alkenyl group having 3 carbon atoms (e.g., 2-propenyl) is more preferable. The alkyl group may be substituted with one or more groups of hydroxy, cyano, phenyl and $-CONH_2$. Furthermore, one or more methylenes which constitute the alkyl group may be replaced with any of $-O-$, $-CO_2-$ and $-NHCO-$. The group which is not involved in the formation of the ring in R^{5a} , R^{6a} and R^{7a} represents alkyl group having 1 to 6 carbon atoms (preferably straight alkyl group having 1 to 6 carbon atoms), alkenyl group having 3 to 4 carbon atoms (preferably straight alkenyl group having 3 to 4 carbon atoms) or alkynyl group having 3 to 6 carbon atoms (preferably straight alkynyl group having 3, 4 or 6 carbon atoms). The alkyl group, the alkenyl group and the alkynyl group, particularly the alkyl group may be substituted with one or more groups of phenyl, thienyl, furyl,

piperidylpiperidyl, pyrrolidyl, morpholyl, cyclopropyl, cyclopentyl, cyano, hydroxy, oxo, nitro, carboxy and $\text{-SO}_3\text{H}$, and further one or more methylenes which constitute the alkyl group may be replaced with any of phenylene, -O- , and -CO_2- . It is more preferable that the alkenyl group and the alkynyl group are not substituted or replaced.--

Please replace the paragraph beginning at page 33, line 14, with the following rewritten paragraph:

--In the more preferable embodiment, the pyrrolidinium ring, the piperidinium ring, the morpholinium ring, the thiomorpholinium ring, the piperazinium ring, the azepanum ring, the quinuclidinium ring and the 1,4-diazabicyclo[2.2.2]octanium ring are substituted with 1) one of any of hydroxy, oxo, cyano, phenyl, CONH_2 or -R^{11} ; 2) one cyano and one hydroxy; 3) one hydroxy group and one -R^{11} ; 4) one oxo group and one -R^{11} ; 5) two oxo groups or 6) two -R^{11} . Alternatively, the pyrrolidinium ring, the piperidinium ring, the morpholinium ring, the thiomorpholinium ring, the piperazinium ring, the azepanum ring, the quinuclidinium ring and the 1,4-diazabicyclo[2.2.2]octanium ring are not substituted. In this embodiment, R^{11} represents straight alkyl group having 1 to 5 carbon atoms (e.g., methyl, ethyl, n-propyl, n-butyl, n-pentyl), branched alkyl group having 6 carbon atoms (e.g., 3,3-dimethylbutyl) or straight alkenyl group having 3 carbon atoms (e.g., 2-propenyl), wherein 1) the alkyl group is substituted with either one of hydroxy and phenyl; or 2) one methylene which constitutes the alkyl group is replaced with any of -CO_2- and -NHCO- ; or 3) two methylenes which constitute the alkyl group are replaced with one -O- and one -NHCO- ; or 4) the alkyl group is substituted with one cyano and further one methylene which constitutes the alkyl group is substituted with -O- ; or 5) the alkyl group is substituted with

one -CONH_2 and further one methylene which constitutes the alkyl group is replaced with -O- ; or 6) the alkyl group is substituted with one phenyl and further one methylene which constitutes the alkyl group is replaced with $\text{-CO}_2\text{-}$; or 7) the alkyl group is substituted with one phenyl and further one methylene which constitutes the alkyl group is replaced with -NHCO- ; or 8) the alkyl group is not substituted or replaced. Specific examples of R^{11} may include methyl, ethyl, n-propyl, n-butyl, n-pentyl, 2-propenyl, benzyl, acetylamino, t-butoxycarbonylamino, hydroxymethyl, 2-hydroxyethyl, 3-hydroxypropyl, 2-cyanoethoxy, (2-cyanoethoxy)methyl, 2-carbamoylethoxy, ethoxycarbonyl, t-butoxycarbonyl, benzyloxy, phenylacetylamino, butanoylamino and pentanoylamino. The group which is not involved in the formation of the ring in R^{5a} , R^{6a} and R^{7a} represents straight alkyl group having 1 to 6 carbon atoms, straight alkenyl group having 3 to 4 carbon atoms or straight alkynyl group having 3, 4 or 6 carbon atoms, wherein 1) the alkyl group, the alkenyl group and the alkynyl group, particularly the alkyl group are substituted with one of any of phenyl, thienyl, furyl, piperidyl, piperidyl, pyrrolidyl, morpholyl, cyclopropyl, cyclopentyl, cyano, hydroxy, carboxy or $\text{-SO}_3\text{H}$; or 2) the alkyl group, the alkenyl group and the alkynyl group, particularly the alkyl group are substituted with two hydroxy groups; or 3) the alkyl group, the alkenyl group and the alkynyl group, particularly the alkyl group are substituted with one hydroxy group and one $\text{-SO}_3\text{H}$; or 4) the alkyl group, the alkenyl group and the alkynyl group, particularly the alkyl group are substituted with four hydroxy groups and one oxo group; or 5) the alkyl group, the alkenyl group and the alkynyl group, particularly the alkyl group are substituted with one nitro group and one morpholyl group; or 6) one methylene which constitutes the alkyl group, the alkenyl group and the alkynyl group, particularly one methylene which constitutes the alkyl group is replaced with $\text{-CO}_2\text{-}$; or 7) the alkyl group, the alkenyl

group and the alkynyl group, particularly the alkyl group are substituted with one morpholyl, and further one methylene which constitutes the alkyl group, the alkenyl group and the alkynyl group, particularly one methylene which constitutes the alkyl group is replaced with -O-. Alternatively, the alkyl group, the alkenyl group and the alkynyl group are not substituted or replaced.--

Page 42, 11

Please replace the paragraph beginning at page 42, line 11, with the following rewritten paragraph:

--Naphthyl in the description of I) to III) may include 1-naphthyl and 2-naphthyl, and preferably 1-naphthyl. Pyridyl may include 1-pyridyl, 2-pyridyl, 3-pyridyl and 4-pyridyl, preferably 1-pyridyl and 4-pyridyl, and more preferably 4-pyridyl. Quinolyl may include 1-quinolyl, 2-quinolyl, 3-quinolyl, 4-quinolyl, 5-quinolyl, 6-quinolyl, 7-quinolyl and 8-quinolyl, and preferably 1-quinolyl or 4-quinolyl. Thienyl may include 2-thienyl and 3-thienyl, and preferably 2-thienyl. Furyl may include 2-furyl and 3-furyl, and preferably 2-furyl. Piperidil Piperidyl may include 1-piperidil 1-piperidyl, 2-piperidil 2-piperidyl, 3-piperidil 3-piperidyl and 4-piperidil 4-piperidyl, preferably 1-piperidil piperidyl or 4-piperidil 4-piperidyl, and more preferably 1-piperidil 1-piperidyl. Pyrrolidyl may include 1-pyrrolidyl, 2-pyrrolidyl and 3-pyrrolidyl, and preferably 1-pyrrolidyl. Morpholyl may include 2-morpholyl, 3-morpholyl and 4-morpholyl, and particularly preferably 4-morpholyl. Cycloalkyl having 3 to 7 carbon atoms may include cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl and cycloheptyl as preferable examples. Phenylene is any of the above formulae (phe-1) to (phe-3), preferably the formula (phe-1) or (phe-2), and more preferably the formula (phe-1). Thienylene is any of the following formulae (thi-1) to (thi-

4), and the formula (thi-1) is particularly preferable.--

Please replace the paragraph beginning at page 63, line 10, with the following rewritten paragraph:

--II) $N^+R^{5a}R^{6a}R^{7a}$ represents a monocyclo or bicyclo ring which is any of pyrrolidinium ring, piperidinium ring, morpholinium ring, thiomorpholinium ring, piperazinium ring, azepanium ring, quinuclidinium ring and 1,4-diazabicyclo[2.2.2]octanium ring, with a proviso that the position of binding to Z^a is the ammonium nitrogen atom. The monocyclo and bicyclo rings may be substituted with one or more groups of hydroxy, oxo, cyano, phenyl, $-CONH_2$, and $-R^{11}$. R^{11} represents alkyl group having 1 to 6 carbon atoms or alkenyl group having 3 carbon atoms. The alkyl group in R^{11} may be substituted with one or more groups of hydroxy, cyano, phenyl and $-CONH_2$, and further one or more methylenes which constitute the alkyl group may be replaced with any of $-O-$, $-CO_2-$, and $-NHCO-$. The group which is not involved in the formation of the ring in R^{5a} , R^{6a} and R^{7a} represents alkyl group having 1 to 6 carbon atoms, alkenyl group having 3 to 4 carbon atoms or alkynyl group having 3 to 6 carbon atoms. The alkyl group, the alkenyl group and the alkynyl group in R^{5a} , R^{6a} and R^{7a} may be substituted with one or more groups of phenyl, thiienyl, furyl, piperidilpiperidyl, pyrrolidyl, morpholyl, cyclopropyl, cyclopentyl, cyano, hydroxy, oxo, nitro, carboxy, $-CONH_2$ and $-SO_3H$, and further one or more methylenes which constitute the alkyl group may be replaced with any of phenylene, $-O-$, and $-CO_2-$; and--

Please replace the paragraph beginning at page 66, line 28, with the following rewritten paragraph:

--The group which is not involved in the formation of the ring in R^{5a} , R^{6a} and R^{7a} represents straight alkyl group having 1 to 6

carbon atoms, straight alkenyl group having 3 to 4 carbon atoms or straight alkynyl group having 3, 4 or 6 carbon atoms, wherein 1) the alkyl group, the alkenyl group and the alkynyl group in R^{5a}, R^{6a} and R^{7a} are substituted with any one of phenyl, thienyl, furyl, piperidi

l+piperidyl, pyrrolidyl, morpholyl, cyclopropyl, cyclopentyl, cyano, hydroxy, carboxy or -SO₃H; or 2) the alkyl group, the alkenyl group and the alkynyl group are substituted with two hydroxy groups; or 3) the alkyl group, the alkenyl group and the alkynyl group are substituted with one hydroxy group and one -SO₃H; or 4) the alkyl group, the alkenyl group and the alkynyl group are substituted with four hydroxy groups and one oxo group; or 5) the alkyl group, the alkenyl group and the alkynyl group are substituted with one nitro group and one morpholyl group; or 6) one methylene which constitutes the alkyl group, the alkenyl group and the alkynyl group is replaced with -CO₂-; or 7) the alkyl group, the alkenyl group and the alkynyl group are substituted with one morpholyl group and further one methylene which constitutes the alkyl group, the alkenyl group and the alkynyl group is replaced with -O-. Alternatively the alkyl group, the alkenyl group and the alkynyl group are not substituted or replaced; and--